Dissertation training at

Max Super Speciality Hospital, Saket

Project on

To conduct a comprehensive gap analysis of the discharge process in the nephrology department at Max Super Speciality Hospital, Saket according to patient billing categories.

By Dr. Priyanka yadav

PG/24/083

Under the guidance of Dr. Sumesh Kumar sir

PGDM (hospital and health management) 2024-2026



International institute of health management and research, New Delhi

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International institute of health management and research, New Delhi

The certificate is awarded to

Dr Priyanka yadav

in recognition of having successfully completed her dissertation in the department of

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and has successfully completed her project on

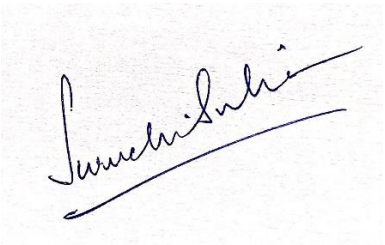
To conduct a comprehensive gap analysis of the discharge process in the nephrology department at max super speciality hospital according to patient billing categories.

16th June 2026

Max Super Speciality Hospital, Saket

She comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning.

We wish her all the best for future endeavors.



Dr Suruchi Sinha

Medical superintendent

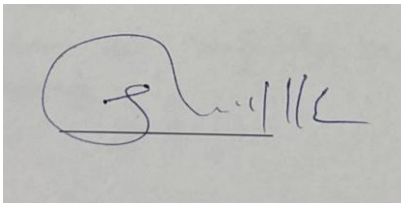
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This is to certify that **Dr Priyanka Yadav** student of PGDM (Hospital & Health Management from International Institute of Health Management Research, New Delhi has undergone Dissertation training at Max super specialty hospital, Saket from 16th March 2026 to 16TH June 2026. The candidate has successfully carried out the project designated to him during dissertation training and her approach to the study has been sincere, scientific and analytical. The Internship is in fulfillment of the course requirements.

I wish her all success in all his/her future endeavors.

Dr Punit Yadav
Academic and Student Affairs
IIHMR, New Delhi

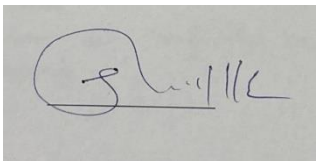


Dr Sumesh Kumar
Mentor
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Certificate of Approval

The following dissertation titled **"To conduct a comprehensive gap analysis of the discharge process in the nephrology department at Max Super Speciality Hospital, Saket according to patient billing categories** at **"Max Super Specialty hospital, Saket"** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **PGDM (Hospital & Health Management)** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

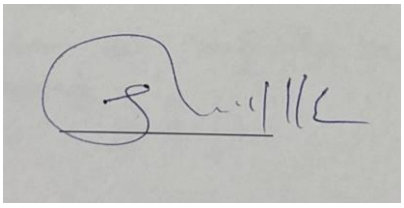
Dissertation Examination Committee for evaluation of dissertation.

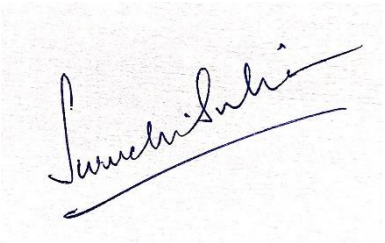
Name	Signature
Dr Sumesh Kumar	
Dr Supten	

Certificate from Dissertation Advisory Committee

This is to certify that **Dr. Priyanka yadav,** a graduate student of the **PGDM (Hospital & Health Management)** has worked under our guidance and supervision. She is submitting this dissertation titled "**To conduct a comprehensive gap analysis of the discharge process in the nephrology department at max super speciality hospital according to patient billing categories** at "Max Super Speciality hospital, Saket" in partial fulfilment of the requirements for the award of the **PGDM (Hospital & Health Management).**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.





Dr Sumesh Kumar
Associate Professor
IIHMR Delhi

Dr Suruchi Sinha
Medical superintendent
Max Super Specialty Hospital, Saket

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH,

NEW DELHI

CERTIFICATE BY STUDENT

This is to certify that the dissertation titled "**To conduct a comprehensive gap analysis of the discharge process in the nephrology department at max super speciality hospital according to patient billing categories".** and submitted by **Dr Priyanka yadav** Enrollment No **PG/24/083** under the supervision of **Dr Sumesh Kumar** for award of **PGDM (Hospital & Health Management)** of the Institute carried out during the period embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.



FEEDBACK FORM

Name of the Student: Dr Priyanka Yadav

Name of the Organisation in Which Dissertation Has Been Completed: Max Super specialty Hospital, Saket

Area of Dissertation: Hospital

Attendance: 100%

Objectives achieved:

1. Analysed the existing discharge process in the Nephrology Department for different patient billing categories (Cash, Insurance, Corporate, CGHS/TPA, etc.).
2. Identified process gaps contributing to delays in patient discharge.
3. Compared discharge timelines and bottlenecks across different billing categories.

Deliverables:

1. Comprehensive mapping of the nephrology discharge workflow.
2. Gap analysis report highlighting delays at each stage of the discharge process.
3. Root Cause Analysis (Fishbone Diagram and/or 5 Whys Analysis).

Strengths:

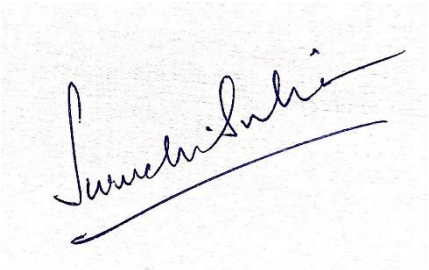
1. Data-driven assessment based on actual hospital discharge records.
2. Focused on a critical quality indicator affecting patient satisfaction and bed availability.
3. Considered multiple stakeholders involved in the discharge process.

Suggestions for Improvement:

Improve coordination between doctors, nursing staff, pharmacy, billing, and insurance teams.

Suggestions for Institute (course curriculum, industry interaction, placement, alumni):

Organise regular guest lectures and workshops by healthcare administrators, quality managers, and hospital executives.



Signature of the Officer-in-Charge/ Organisation Mentor (Dissertation)

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CERTIFICATE ON PLAGIARISM CHECK

Name of Student (in block letter)	**Dr./Mr./Ms.:** Priyanka Yadav		
Enrollment/Roll No.	PG/24/083	**Batch Year**	2024-26
Course Specialization (Choose one)	Hospital Management	Health Management	Healthcare IT ✓
Name of Guide/Supervisor	**Dr./ Prof.:** Sumesh Kumar		
Title of the Dissertation/Summer Assignment	To conduct a comprehensive gap analysis of the discharge process in the nephrology department at Max super specialty hospital, Saket according to billing categories		
Plagiarism detect software used	**"TURNITIN"**		
Similar contents acceptable (%)	Up to **15** Percent as per policy		
Total words and % of similar contents Identified			
Date of validation (DD/MM/YYYY)	7/7/2026		

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Name: Dr. Sumesh Kumar sir

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Name: Dr Priyanka Yadav

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Acknowledgement

I would like to express my sincere gratitude to all those who contributed towards the completion of my dissertation project.

On a personal note, I would like to thank **Dr Sumesh Kumar sir** (my institute mentor) and **Dr Suruchi Sinha ma'am** (my organisation mentor) for all their support, guidance and helpful comments. They have provided expert guidance and motivation in guiding this work.

I would like to appreciate the entire team of nephrology department of Saket max super speciality hospital and their good cooperation and help given. This research was significantly enhanced by the environment in which the work was carried out in collaboration and through adequate facilities.

It is a dissertation that bears the joint signature of all those who have contributed, and i owe a great deal to the contribution of each one.

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Abbreviations

S.no.	Abbreviation	Full form
1	CKD	Chronic kidney disease
2	AKI	Acute kidney injury
3	ESRD	End stage renal disease
4	NABH	National accreditation board for hospitals
5	CRRT	Continuous renal replacement therapy
6	ICU	Intensive care unit
7	TPA	Third party administrator
8	SOPS	Standard operating procedures
9	IPD	In patient department
10	OPD	Outpatient department
11	ER	Emergency
12	SICU	Surgical intensive care unit
13	LAMA	Left against medical advice
14	TAT	Turnaround time
15	RMOS	Resident medical officer

About nephrology department at max super speciality hospital, saket

Nephrology department at max super speciality hospital, saket is an important part of the centre of excellence for renal sciences, which offers the patient full service care for those suffering from renal issues. It is a tertiary care hospital that sees a high number of patients with chronic kidney disease (ckd), acute kidney injury (aki), end stage renal disease (esrd) and other renal transplant related conditions.



Figure no 1: - Max super speciality hospital

The department has performed dialysis services, transplant icus etc and has a good infrastructure of support and multidisciplinary support including nephrologists, nurses, dietitians and transplant coordinators. They provide a wide range of services, such as hemodialysis, peritoneal dialysis, continuous renal replacement therapy (CRRT), kidney transplantation and pre and after transplant services.

Discharge planning is essential when a patient is admitted to a hospital under nephrology, as the management will involve a long-term process and close monitoring. There are processes for effective discharge which provide continuity of treatment, medication adherence, dietary and fluid management, and follow-up care.

However, in a complex hospital environment, discharge processes may vary depending on billing categories such as cash, TPA (third party administrator), and corporate patients. These

variations often introduce administrative delays, coordination challenges, and potential gaps in discharge documentation and patient education.

Standards set by national accreditation board for hospitals & healthcare providers emphasize structured discharge planning, including complete documentation, patient counselling, and coordinated care transitions. Despite these guidelines, practical challenges may lead to discrepancies between expected and actual practices.

A gap analysis needs to be carried out in the discharge process within the nephrology department to find out the shortcomings, streamline the process and boost patient outcomes.

Abstract

In the healthcare setting, the discharge process is an important transition stage that guarantees the safe and effective movement of a patient from a hospital setting to the home or appropriate healthcare setting. A multifaceted process that includes a full medical evaluation to ascertain readiness to move home, thorough discharge planning and work with patients and families about post-discharge care. These are all important elements that involve taking time to ensure that all necessary support services are arranged, medication is balled out with the patient and documented in the plan, and discharge paperwork is completed properly and promptly.

The discharge process is defined by certain standards set by the national accreditation board for hospitals & healthcare providers (NABH) that promote quality and patient safety. A few key components of these standards are: structured, comprehensive discharge process starting early by a team of providers, education of the patient and family around the patient's condition, treatment, medications, and follow up plans and accurate medication reconciliation. An explanatory discharge (and transfer) note needs to be given to the patient and passed on to the next health care professional who will take over the care of them, which should include diagnosis, treatment, condition on discharge, drugs and the circumstances of discharge. All coordination for necessary support services including home health care, medical equipment, etc. Must be done prior to discharge. When it comes to continuity of care, it's crucial to have good documentation and communication between healthcare providers, patients, and caregivers. Post-discharge care arrangements are very important in ensuring that the patient is monitored and issues are addressed in a timely manner.

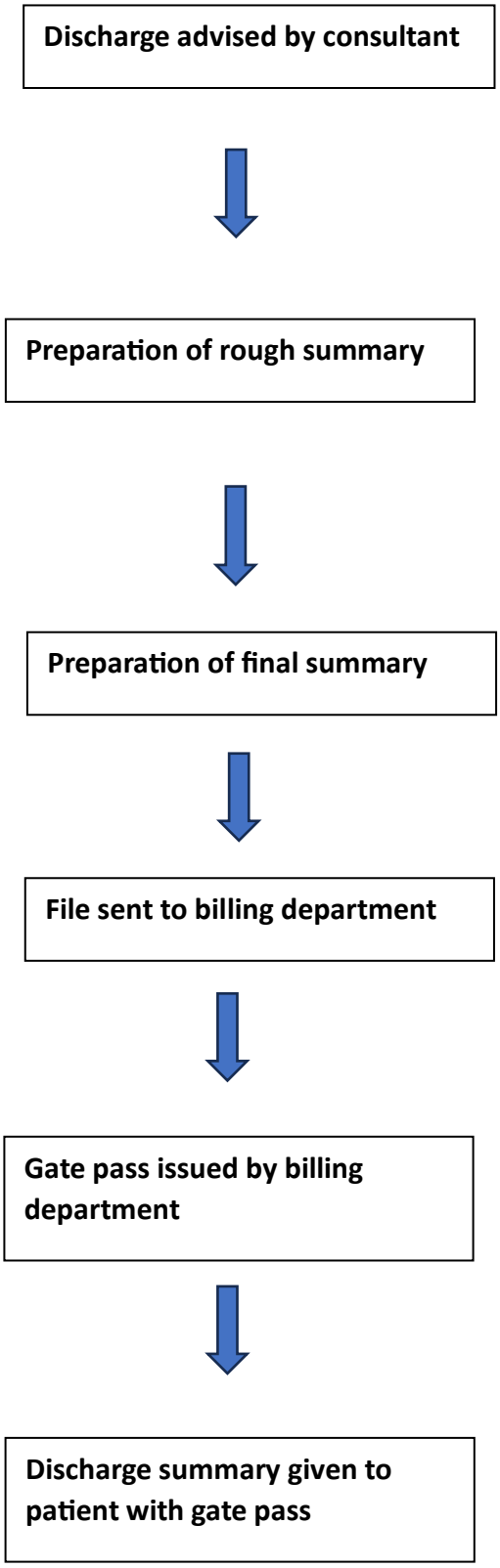
This study (gap analysis of discharge process) is designed to find out the gaps in the discharge process and suggest possible solutions. A total of 80 patients' data is been taken and analysed which includes, 30 cash, 30 TPA, and 10 panel patients and 10 international patients. Ideas for gaps were spotted and suggestions were made for them.

This project also aims to identify the root causes of any delays in the process, any standard operating procedure (SOP), and an effort to first identify the potential remedies and operational improvements. This study was conducted in the IPD of nephrology at max hospital.

Recommendations were developed in light of the investigation to resolve these problems and enhance the discharge procedure. Among the recommendations made were the speeding up of discharge planning procedures, the improved quality of interaction and communication among players within the health care system, greater availability and speed of diagnostic reports and the establishment of good patient transportation systems,

All these recommendations, if implemented, can help in reducing the overall time taken to move patients out of the nephrology care, reducing bed occupancy, enhancing patient satisfaction and improving overall operational efficiency of the hospital's nephrology department.

Process mapping



Aim and objectives

To study the process of discharge analyse the gaps and scope of operational improvement in the discharge process in nephrology department at max hospital, Saket.

Primary objective: -

To assess the discharge time for cash, panel, and TPA patients and find actual cause of delay.

Secondary objective: -

To provide suggestions for operational improvement and improve the quality of patient care.

Methodology

Study design: - a cross- sectional study based on observational process mapping and quantitative research enumerating the percentage of discharges within time and enumerate analyses. I.e, the period of each of steps for discharge as well as various elements leading to discharge on or off time.

Study area: - IPD area of nephrology department at max super speciality hospital, saket.

Sampling method: - purposive sampling

Sample size: - 80 patients

Data collection tools: - participant observation

Study duration: - 1 month

Data collection : - 15 days

Inclusion criteria: - IPD patients who are admitted to nephrology department to the ward of the hospital.

Exclusion criteria: - patients of daycare department, ER, SICU, LAMA discharges.

Results

Types of discharges: -

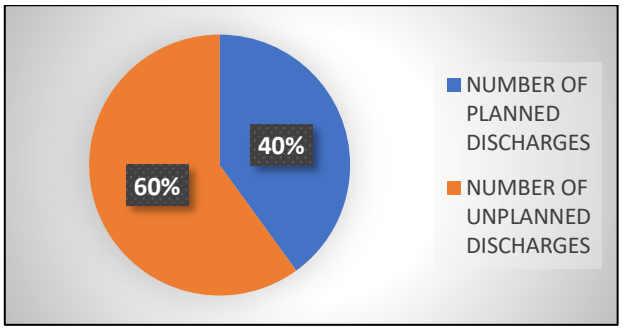


Figure no 2: - Types of discharges

This bar chart illustrates the types of discharges in nephrology department at max super speciality hospital, Saket with 40% of planned discharges and 60% of unplanned discharges.

- Planned discharges: - follow a scheduled plan with fewer administrative challenges.
- Unplanned discharges: - occur unexpectedly due to unforeseen circumstances.

Opportunities for improvement: -

1: - enhanced protocols: develop comprehensive discharge planning protocols.

2: - better communication: - strengthen communication among healthcare providers.

3: - pre- discharge assessments: - implement through assessments to identify potential issues early.

4: - patient education: - educate patients about the discharge process.

By improving these areas, we can increase planned discharges, optimise resources, and enhance patient satisfaction.

However, a significant proportion (around 60%) of patients in the Nephrology Department are discharged without a planned discharge, despite the availability of protocols for structured discharge planning, due to delays in clinical decision-making, insurance approvals, billing processes, diagnostic reports, dialysis scheduling, and multidisciplinary coordination.

Discharge time for cash patients

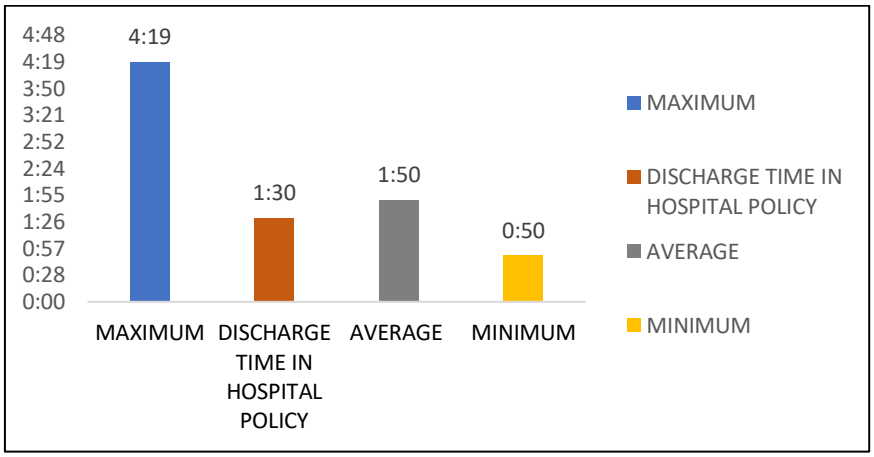


Figure no 3: - Discharge time for cash patients

This figure shows the discharge time metrics for cash patients, with a maximum of 4 hours 19 minutes, a minimum of 50 minutes, and an average of 1 hours 50 minutes. To better align with the hospital policy time of 1 hour 30 minutes, solutions include streamlining discharge steps, improving coordination among departments, and ensuring timely consultant sign-offs. Implementing a checklist for discharge procedures and regular staff training can also help reduce discharge times.

Discharge time for TPA patients

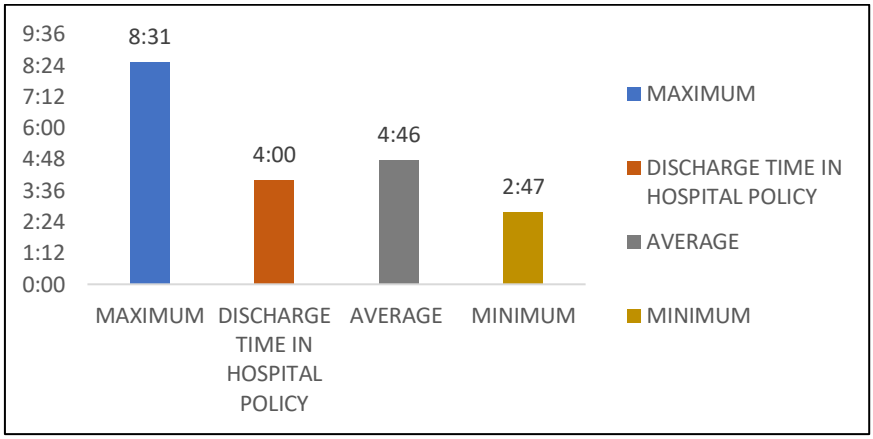


Figure no 4: - Discharge time for TPA patients

This figure illustrates discharge times for TPA patients, with a maximum of 8 hours 31 minutes, a minimum of 2 hour 47 minutes, and an average of 4 hours 46 minutes. Solutions include streamlining the TPA approval process and enhancing coordination between departments. Establishing a dedicated TPA coordination team and using automated approval systems can significantly reduce discharge times to meet the hospital policy time of 4 hours.

Discharge time for corporate patients

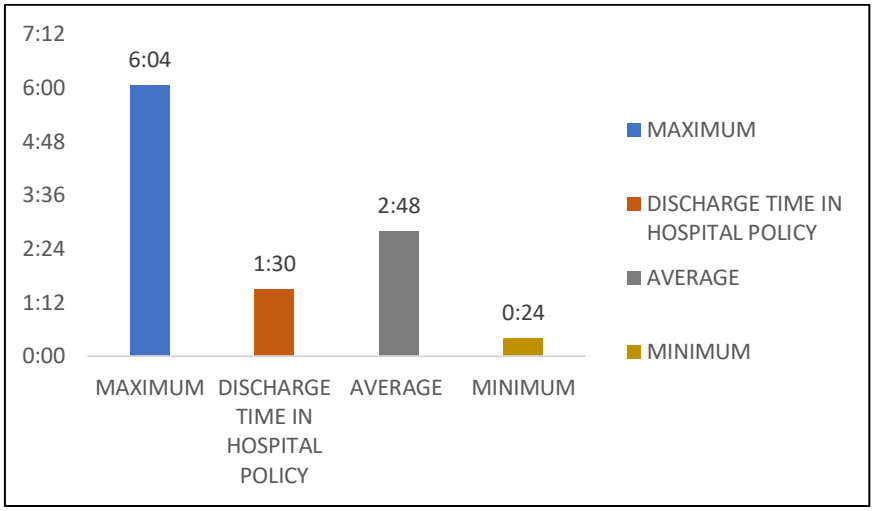


Figure no 5: - Discharge time for corporate patients

This figure presents discharge time statistics for panel patients, showing a maximum of 6 hours 4 minutes, a minimum of 24 minutes, and an average of 2 hours 48 minutes. To improve adherence to the hospital policy time of 1 hour 30 minutes, focus on better communication between staff, efficient discharge planning, and minimizing administrative delays. Standardizing discharge protocols and using electronic health records (EHR) for real-time updates can enhance the process.

Discharge time for international patients

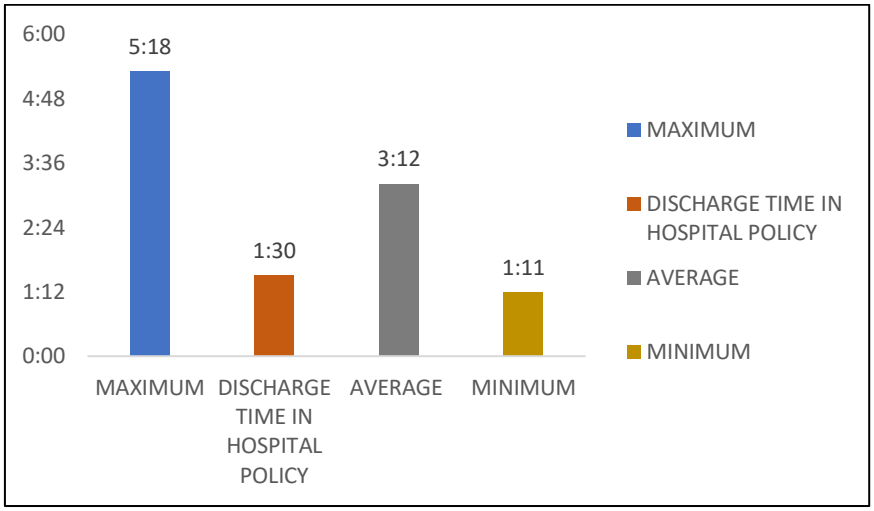


Figure no 6: - Discharge time for International patients

This figure presents discharge time statistics for international patients, showing a maximum of 5 hours 18 minutes, a minimum of 1 hour 11 minutes, and an average of 3 hours 12 minutes. To improve adherence to the hospital policy time of 1 hour 30 minutes, focus on better communication between staff, efficient discharge planning, and minimizing administrative delays.

Reasons for delay in cash patients

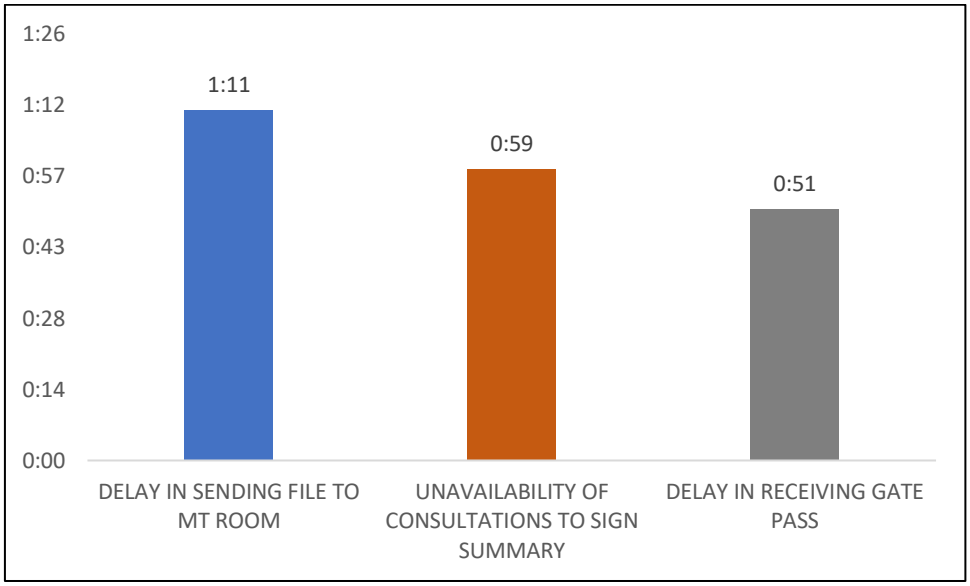


Figure no 7: - Reasons for delay in cash patients

This figure outlines reasons for delay in cash patient discharges, including file transfer delays (1 hour 11 minutes) and consultant unavailability (59 minutes), & delay in gate pass (51 minutes). Solutions include streamlining file transfers by implementing an electronic document management system and ensuring timely consultant sign-offs through automated alerts and better scheduling. Regular reviews and audits of the discharge process can identify and address bottlenecks.

Reasons for delay in TPA patients

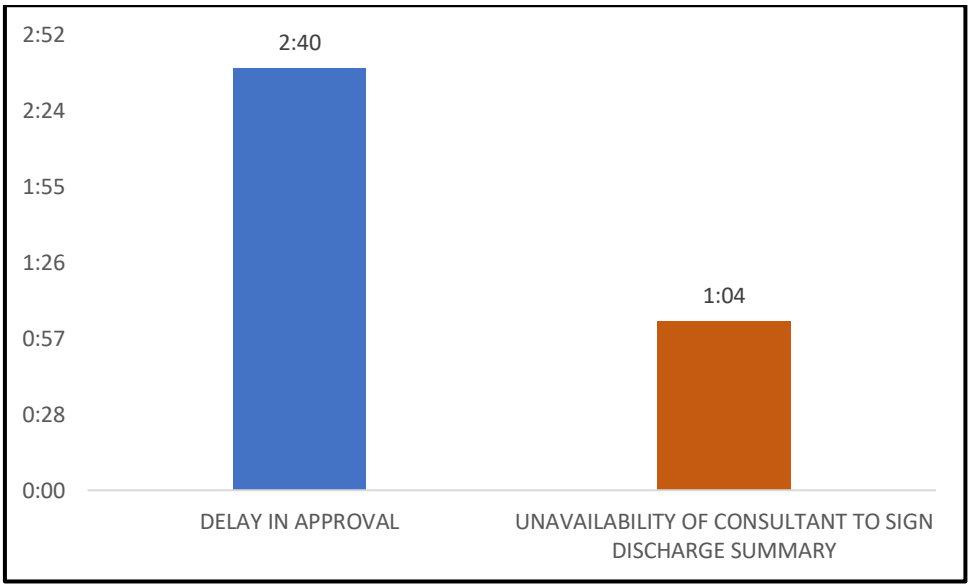


Figure no 8: - Reasons for delay in TPA patients

This figure identifies reasons for TPA patient discharge delays, such as 2 hours 40 minutes delay in approvals and 1 hours 4 minutes delay because of unavailability of consultant to sign the discharge summary. Solutions include improving the approval process by setting up pre-approval protocols and ensuring consultant availability through better scheduling and reminders. Using a centralized tracking system for TPA approvals and frequent communication with TPAs can also expedite the process.

Reasons for delay in corporate patients

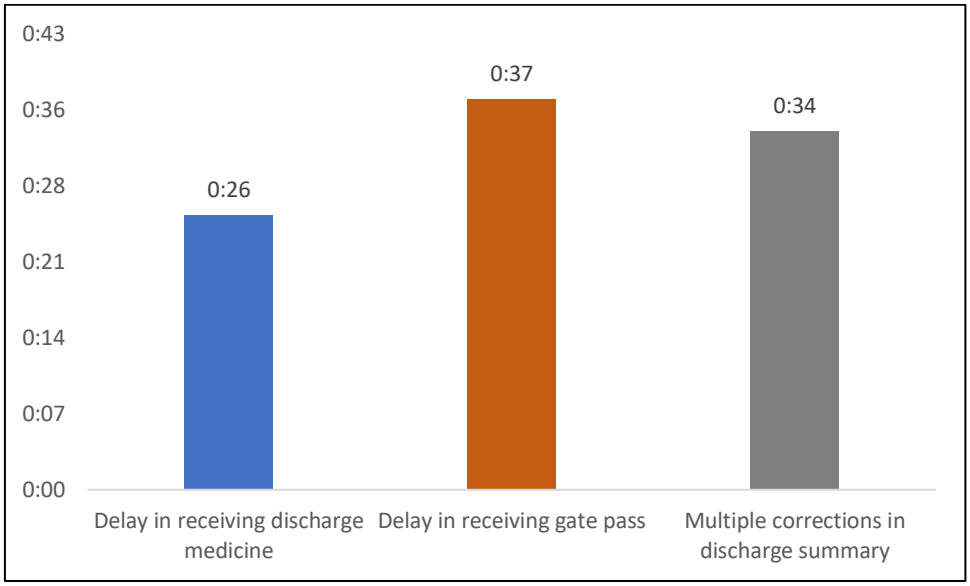


Figure no 9: - Reasons for delay in corporate patients

This figure explains delays in panel patient discharges, primarily due to delays in receiving discharge medicine (26 minutes) and gate passes (37 minutes) and multiple corrections in discharge summary (34 minutes). Solutions include improving coordination with the pharmacy and the billing department. Setting up a fast-track lane for discharge medicines and implementing an electronic gate pass system can help reduce these delays. Additionally, frequent cross-departmental meetings can enhance overall coordination and efficiency.

Reasons for delay in international patients

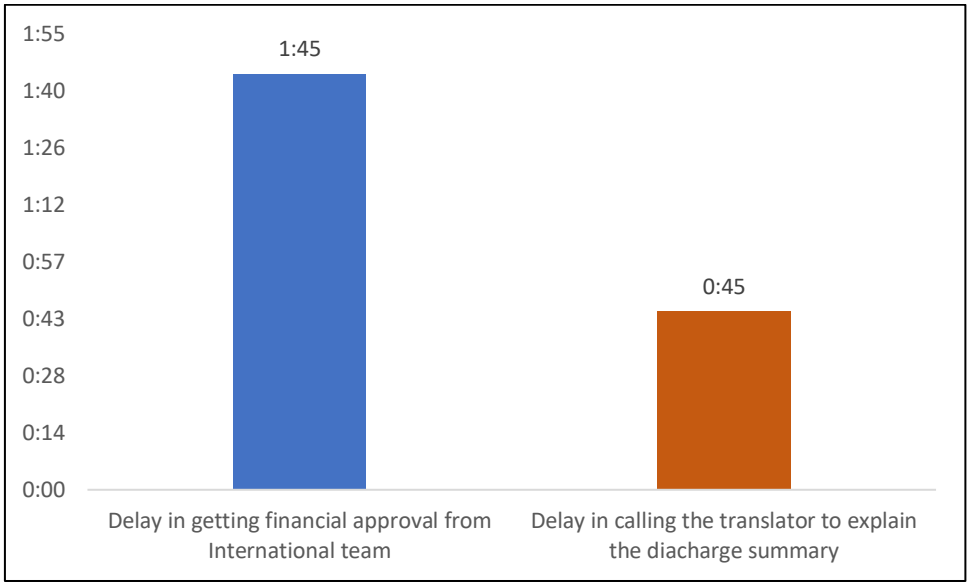


Figure no 10: - Reasons for delay in international patients

This figure explains the delay in international patient discharges, primarily due to delay in getting financial approval from international patient services team (1 hour 45 minutes), and delay in calling the translator to explain the discharge summary (45 minutes). Solutions include that the international patients team take approvals for large amount of bill beforehand.

Cause and Effect diagram

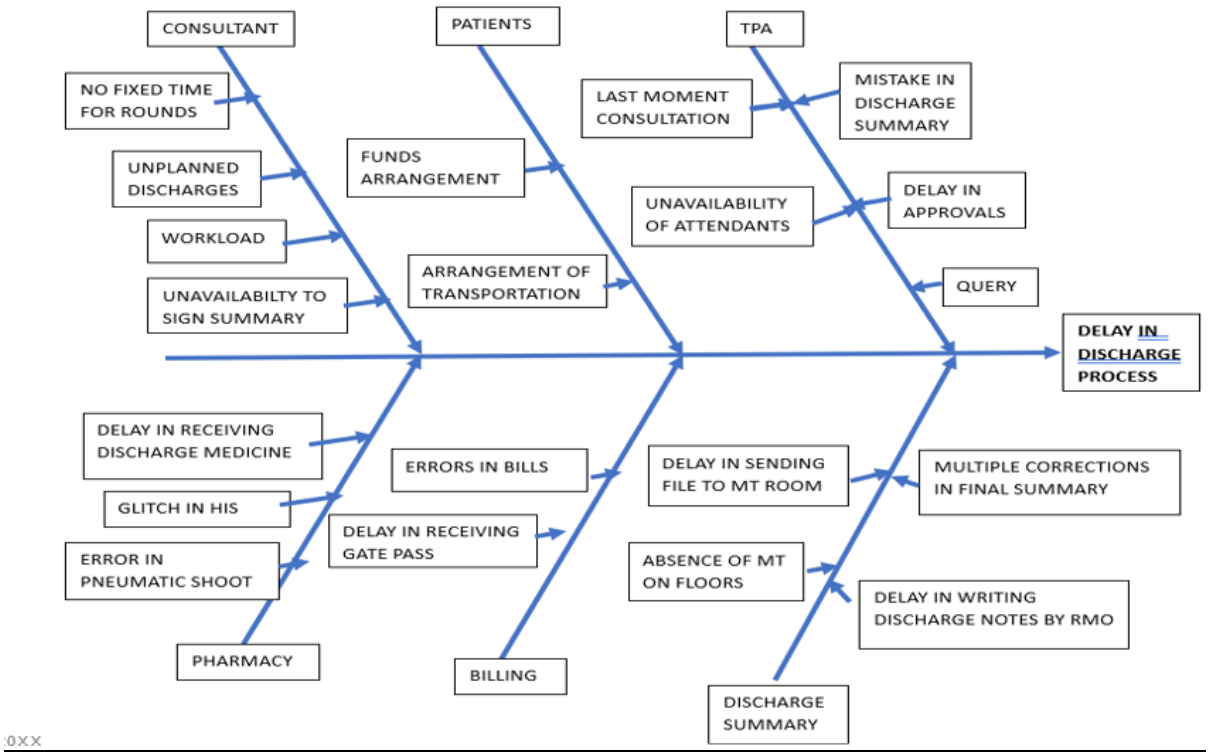


Figure no 11: - Fishbone diagram

The diagram shows six broad groups that contribute to discharge delays:

1: -Consultant related factors: Unplanned discharge; heavy workload; delayed signing of discharge summaries; irregular consultant rounds.

2: -Patient related factors: Delay in arranging late funds and transportation problem.

3: -TPA/Insurance related factors: Delays in insurance approvals due to documentation errors, queries, last minute consultations and non-availability of attendants.

4: -Pharmacy-related issues: Delay in receiving discharge medicines because of HIS glitches, pneumatic tube errors or slow dispensing of medicines.

5: -Billing-related factors: delays due to billing errors and late issuance of gate passes.

6: -Factors related to Discharge Summary : Delay due to incomplete/ wrong discharge summary, multiple correction, delay in documentation by RMOs.

Discussion

The goal of this project was to find the gaps in the discharge process and enhance the efficiency of the hospital.

There are various reasons for delay in discharges out of which one of the most important factors unplanned discharges. According to the data, 60% of total discharges are unplanned which leads to major delay.

It has been found that the time taken for discharge of cash patients, is 1 hour 50 mins, which is 20 minutes more than the hospital policy. For panel patients, a delay of 1 hour 18 minutes has been found. For TPA patients, a delay of 46 minutes has been found.

The main reason for the delay in cash patients was the unavailability of the consultant to sigs the discharge summary, the delay in receiving the gate pass, and the delay in sending the file to the MT room.

Similarly, the delay in TPA patients was mainly due to a delay in approval from health insurance companies for which pre-authorization should have been sent beforehand.

Corporate patients were provided discharge medicines for 7 days which adds to the delay in discharge TAT of 1 hour 18 minutes.

Following can be done to reduce discharge times of all the billing categories: -

Requirements for Waiting Area / Discharge Waiting Room

(Will help in avoiding the delay for travel arrangements)

* AOD a day Prior.

* Planned discharges to be initiated before 9:00 AM.

* Plan discharges as per ALOS.

* Investigations to be planned as per the evening rounds or night rounds.

* Better communication with doctors, nurses, and patients.

* Plan for MDR as per ALOS.

* Planned discharge summary should be prepared one day before for TPA cases.

* Financial communication with the patient should be done as per the planned ALOS.

* Billing (Tentative) can be shared with the patient/attendant as per the planned ALOS, and corrections should be completed one day prior.

* Timely preparation of Radiology reports and invasive procedure reports.

* Apart from this, timely communication with the patient/attendant regarding the discharge process and the time to vacate the room.

Conclusion

Discharging patients appropriately is complicated. Effective and well-timed discharge can be lined by interdepartmental coordination and proper communication between all involved in the process of discharge. Delays in patient discharge can arise from various factors, including billing challenges, pharmacy issues, insurance complications, payment processing from cash, and documentation inefficiencies. Unplanned discharges are the main reason for the chaos in the discharge process. In NABH chapter 1, AAC 13 mentions that the discharge should be planned consultation with the patient/ family.

To address these delays, several suggestions were provided, which included proper staffing and inter-departmental coordination, optimizing discharge planning and processes, upgrading equipment and resources, streamlining insurance processes, enhancing documentation practices optimizing facility design and workflow, and implementing technology integration. Patient education and engagement were also emphasized.

Limitations

- Only IPD patients who are admitted to the wards are included.
- The absence of a proper hospital management information system (HMIS) and electronic medical record system in hospitals leads to inefficiency in data collection and coordination.

Suggestions

- Discharges should be planned.
- Consultant rounds should be done on time.
- Coordination between nursing staff is important.
- Giving priority to TPA patients as they take the most time to receive approval
- Discharge medicines should be received on time.
- RMOs should prepare discharge notes on time.
- In cashless patients, documents should be collected with time so that the nurse doesn't have to rush to collect reports or clearances.
- Interdepartmental coordination and communication (training, sensitization, meetings, communication channel)
- Timely report collection & departmental clearance,

References

https://www.maxhealthcare.in/hospital-network/max-super-speciality-hospital-saket

https://www.maxhealthcare.in/doctor/nephrologists-in-saket

Annexure

S.no	Observation parameter	Yes/no	Time Recorded	Remarks
1	Patient medically fit for discharge documented			
2	Discharge summary prepared			
3	Nursing clearance completed			
4	Medication reconciliation completed			
5	Pharmacy medicines prepared			
6	Billing initiated			
7	Tpa/corporate approval received			
8	Final billing clearance done			
9	Patient counselling completed			
10	Follow-up explained			
11	Transport/attendant ready			
12	Actual discharge completed			
13	Delay observed			
14	Reason for delay documented			

Priyanka Yadav D report

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